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February 28, 2015

Attn: Document Control Desk
U.S. Nuclear Regulatory Commission
Mr. Drew Persinko, Deputy Director
Decommissioning & Uranium Recovery Licensing Directorate
Division of Waste Management & Environmental Protection
Office of Federal and State Materials &
Environmental Management Programs
11545 Rockville Pike
Rockville, MD 20852-2738

Subject: License SUA-1314
Docket No. 040-08502
Willow Creek Project
ALARA Report
Semi-Annual Effluent and
Environmental Monitoring Report

Dear Mr. Persinko:

In accordance with 10 CFR 40.65 and per license conditions 12.1 and 12.3 of Source Materials License SUA-1341, please find enclosed the Semi-Annual Effluent and Environmental Monitoring Report for the period of July 1 through December 31, 2014. Additionally the annual land use survey report is included as a separate document

Please contact me should you have any questions regarding this report.

Sincerely,

Ryan Schierman
RSO

cc: R.Kukura
S. Schierman

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Willow Creek ISR Project
License Number SUA-1341
Docket No.040-08502

Semi-Annual Report

July 01, 2014 through December 31, 2014

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1.0 INTRODUCTION

In accordance with Sections 12.1 and 12.3 of the Nuclear Regulatory Commission (NRC) Source License No. SUA-1341, Uranium One USA, Inc. hereby submits the 2014 Semi-Annual Effluent and Monitoring Report. This document summarizes the required operational and environmental monitoring activities conducted at the Irigaray (IR) and Christensen Ranch (CR) projects from July 1, 2014 through January 31, 2014.

2.0 OPERATIONAL MONITORING

2.1 Activities Summary

During the report period, production operations occurred at Mine Unit 7, Mine Unit 8, Mine Unit 5-2, Mine Unit 10A, and Mine Unit 10B.

2.2 Excursion Well Status

On December 31, 2014 Uranium One confirmed the excursion status of 7MW27 and reported the event to the DEQ and NRC on January 01, 2015. Uranium One has taken corrective measures and the excursion has been controlled. The well will be taken off of excursion status after one more sample confirms that the water quality is below two of the upper control limits. A detailed report on the status of the excursion will be sent to the NRC as part of the quarterly reporting requirement stipulated in license condition 11.2

2.3 Groundwater Volumes Injected and Recovered

During this reporting period an overall wellfield bleed was maintained at 1.1%. A total of 1,505,948,089 gallons were injected and 1,490,127,845 gallons were recovered during this period. During the reporting period all mine units averaged at least 1% bleed except for MU 8 which for the reporting period had an average bleed of 0.7%. The data is summarized by wellfield in Table 1 and is located in Appendix A of this report.

2.4 Injection Manifold Pressures

Injection manifold pressures at the CR project are limited to 140 psi during wellfield operations and 168 psi during maintenance tasks, as per License Condition 11.1. Injection manifold pressures are continuously logged by pressure chart recorders located in every wellfield module building. The data from these logs are summarized in Table 2 of Appendix A.

The 140 psi limit was exceeded eight (8) times during the 4th Quarter of 2014 due to extremely cold weather, power failures to the modular building, or mechanical failure of the recording device. On Monday November 10, 2014 Modular Buildings 7-1, 7-4, and 7-5 lost power, and during this time the small line from the injection line to the circular chart graph froze. This resulted in three different modular buildings exceeding the 140

psi limit. Once the power was restored and the lines were thawed normal pressures were recorded.

Additionally on Wednesday November 12, 2014, modular buildings 5-2 and 8-1 had the small line freeze up that connects from the injection line to the circular charts. Both small lines were thawed and normal pressures were recorded after thawing.

During November 24, 2014 through December 31, 2014 the circular chart pen in Module Building 7-1 was out of adjustment, and recorded high pressures that exceeded the 140 psi limit. Daily inspection forms were obtained from the well field operators and their readings confirm that the pen was out of adjustment. This event is represented in Table 2 of Appendix A as two separate weeks show exceedance of pressure for Modular 7-1. The same problem of the pen being out of calibration occurred on December 01, 2014 in Module Building 7-4, resulting in an exceedance of the pressure limit. The pen was adjusted and and normal pressures were recorded.

2.5 Summary of Mechanical Integrity Testing (MIT)

During the report period, Mechanical Integrity Tests (MIT's) were completed on a total of 46 wells. The MIT's were completed using the "Two Packer Pressurized Test Method" approved in Permit No. 478. The table of the MIT records is contained in Attachment A. Of the total of 46 MIT's that were performed, there were 2 failures.

The MIT's were completed in the following area:

Location	Number MIT's	Number Failures
Mine Unit 7	44	0
Mine Unit 8	2	2

The two wells that failed MIT testing occurred in Mine Unit 8 during the 3rd quarter of 2014 (8Z189-1 and 8AA187-2). Uranium One is accessing whether the wells need to be abandoned or further maintenance work will allow the wells to pass MIT testing.

There were no wells that were abandoned during the period of July 1, 2014 through December 31, 2014. The abandonment records are maintained on site.

3.0 Restoration

3.1 Christensen Ranch:

All groundwater restoration activities, including stabilization monitoring, ended at Christensen Ranch on May 30, 2005. The results of all wellfield restoration were compiled into a report and submitted to the WDEQ and NRC on April 8, 2008.

3.2 Irigaray:

Irigaray groundwater restoration activities and stabilization monitoring were conducted from 1990 to 2002. The "Wellfield Restoration Report Irigaray Mine" was submitted to the WDEQ in July of 2004. The WDEQ-LQD approved restoration of Irigaray Mine Units 1-9 via correspondence dated November 1, 2005. After an independent review, Irigaray restoration approval was received from the NRC in correspondence dated September 20, 2006. For a complete history of the Irigaray wellfield restoration, please see the previously referenced report. No production areas are in restoration for the reporting period.

4.0 ENVIRONMENTAL MONITORING

4.1 Regional Ranch Wells

Five stock watering and domestic water wells are located within two kilometers of Christensen Ranch mining area, and one is located near Irigaray. Routine quarterly groundwater samples were collected from these six regional ranch wells. The samples were analyzed for Uranium, Thorium-230, Radium-226, Lead-210 and Polonium-210 both in suspension and dissolved. Before 2012 samples were only analyzed for dissolved radionuclides. Review of the data indicates elevated amounts of Pb-210 in suspension across multiple wells. Since historical data is limited for suspended radionuclides in regional ranch well it is difficult to determine if it is just natural fluctuations. Even though the Pb-210 may be elevated it is well below the effluent concentration limits. Uranium will continue to monitor data to more fully determine the cause. All other parameters are in line with historical data presented in Table 5.23 of the SUA-1341 License Renewal Application. Sampling was consistent with the requirements of License Condition 11.3 and Section 5.8 of the License Renewal Application. This data is summarized in Table 3 of Appendix A.

4.2 Surface Water Monitoring

During the reporting period Surface Water samples were collected across the Willow Creek Project. Willow Creek is the only source of surface water present within and adjacent to the permit boundaries of both the IR and CR projects. Willow Creek is an ephemeral stream which was sampled on a quarterly basis. Three sample locations are designated at both project sites; upstream, downstream and within the permit boundary. The Powder River is also sampled annually at the Brubaker Ranch, which is approximately 4.5 miles downstream from its confluence with Willow Creek. Sample location IR-9 is located where Willow Creek meets up with the Powder River.

During the sampling period all regional wells that are sampled quarterly were below the 10 CFR Appendix B Table 2 Effluent Concentrations. Elevated reading for suspended solids was noticed in the annual Powder River sample. Uranium One has only analyzed for suspended solids since 2012 so comparison to historical data is limited. For dissolved solids the sample is within historical variance for the location. Uranium One is currently investigating the possible cause. Historically the Powder River has carried a lot of sedimentation. Activities at Irigaray and Christensen all flow into the Willow Creek. Looking at the data for the other surface samples there is no indication of elevated

results. Additionally looking at IR-9 where the Powder River and Willow Creek meet there is no elevated suspended radionuclides at that location. Uranium One will resample the Powder River once the river thaws enough such that technicians can grab a sample safely.

The summary of the surface water sampling is summarized in Table 4 of Appendix A.

4.3 Summary of Spills

There were three reportable spills during the reporting period. Emails, written notifications, and summary reports were submitted to the NRC and WDEQ regarding these events and will not be duplicated in this report.

4.4 Soil Sampling

Annual soil sampling at the Willow Creek environmental locations occurred during the previous reporting period. The samples were taken from 5 locations at the Irigaray Project and 4 locations from the Christensen Project. Sampling locations coincide with air particulate stations and radon stations. The soil was analyzed for uranium, radium-226, lead-210, and thorium. Refer to the Semiannual Report for January 1, 2014 through June 30, 2014 for the analytical results.

4.5 Vegetation Sampling

Annual vegetation sampling at the Willow Creek environmental locations occurred during the previous reporting period of January 01, 2014 through June 30, 2014. However, the analytical results were not received until after the report was submitted, so therefore they will be submitted in this report and are shown in Table 5 of Appendix A. The samples were taken from 5 location at the Irigaray project and 4 locations at the Christensen Project. Uranium One. Comparing the vegetation results to historical averages as are presented in Table 5.15 of the SUA 1341 License Renewal Application no upward trends were noted and all samples were within natural variances of the historical averages.

5.0 AIR MONITORING

5.1 Dryer Stack Emissions

The semi-annual Dryer Stack Emission testing was performed on May 22, 2014 and December 09, 2014 by Western Environmental Services and Testing Services. The test in December showed a release rate of 0.049 lb/hr, which is in compliance with the WDEQ Air Quality Permit OP254 of 0.30 lb/hr. A summary of the total emissions is summarized in Table 6 of Appendix A. As can be noted in Table 6 of Appendix A the material released was higher in the second half of the year. This was the direct result of drying the Honeymoon material which is a much dryer feed going into the dryer.

As a result of NRC comments, quantities were reported for Th-230, Pb-210, Ra-226, and U-nat. These values are based on the operating times of the dryer and the stack testing results. Uranium One is awaiting NRC approval of methodologies for quantifying radon before implementation as per license condition 11.3.

5.2 Environmental Airborne Radionuclides

During dryer operations, continuous airborne radionuclide sampling is required at the five specified environmental air sampling locations at the IR project. The yellowcake dryer was in operation during the first and second quarters of 2014. The stations used to monitor airborne radionuclides and are located as follows:

- IR-1 Downwind of Restricted Area
- IR-3 Upwind of Restricted Area
- IR-5 is located at Brubaker Ranch
- IR-6 is the background location
- IR-13 is the employee house trailer and is considered the maximally exposed individual.

Air Particulate samples are collected weekly and then composited quarterly for analysis by an outside laboratory. The data for the 2014 calendar year are summarized in Table 8 of Appendix A. It is important to note that during the 3rd quarter of 2014 Uranium One began drying Honeymoon material.

5.3 Environmental Radon Monitoring

Radon gas is monitored continuously at the six environmental air locations surrounding the Irigaray Project, and five locations surrounding the Christensen Ranch Project. Passive outdoor radon detectors are exchanged quarterly and sent to Landauer for analysis. The data is shown in Table 8 of Appendix E. Data is given as raw data without subtracting the background location. Comparing the data to historical data presented in 5.11 and 5.12 of the SUA 1341 License Renewal Application the data is all below or within historical values.

5.4 Environmental Gamma Radiation Monitoring

Passive gamma radiation is monitored continuously at six environmental air locations surrounding the Irigaray Project and at five locations surrounding the Christensen Ranch Project. Dosimeters are exchanged and analyzed quarterly by the Landauer Dosimetry Services, a NVLP accredited company. Review of the data indicates that the control used for second quarter is higher than what is typically expected. The controls are kept in low gamma radiation areas. The high 2nd quarter control was the result of the badge being stored over at Irigaray in the RST office desk. Due to the gamma radiation from the stored Honeymoon Drums the desk was not a low gamma dose area. To correct the high control Uranium One took the average of the three other quarters for 2014 and applied it to the 2nd quarter readings. The other three quarters were fairly consistent in there readings. A summary of the data is presented in Table 9 of Appendix A. The data seems to be consistent with values presented in Tables 5.19 and 5.20 of the SUA-1341 License Renewal Application.

5.5 Effluent Released from Willow Creek Activities

As part of the 10 CFR 40.65 effluent monitoring requirements the licensee must specify the quantity of each of the principle radionuclides released to unrestricted areas in liquid and in gaseous effluents during the previous six months. Additionally we are required under License Condition 11.3 to quantify the principal radionuclides from all point and

diffuse sources. Under this license condition methods for estimating quantity of radionuclides emitted from a facility need to be verified by NRC before implementation. Once verification is achieved by the NRC these estimations will be made and reported under this section of the report.

6.0 PUBLIC DOSE

10 CFR 20.1301 requires that each NRC licensee conduct their operations in a manner that the total effective dose equivalent (TEDE) to members of the public does not exceed 100 mrem in a year, and that the dose from external sources in any unrestricted area does not exceed 2 mrem in any hour.

Additionally, 10 CFR 20.1302 requires licensees to show compliance to these dose limits by:

1. Demonstrating by measurement or calculation that the total effective dose equivalent to the individual likely to receive the highest dose from the licensed operation does not exceed the annual dose limit or
2. Demonstrate
    1. The annual average concentration of radioactive material released in gaseous and liquid effluent at the boundary of the unrestricted area do not exceed the values specified in table 2 of appendix B
    2. If an individual were continuously present in an unrestricted area, the dose from the external sources would not exceed 0.002 rem (0.02 mSv) in an hour and 0.05 rem (0.5 mSv) in a year.

Uranium One will demonstrate compliance to the public dose requirements by performing a dose assessment for the individual predicted to be the maximally exposed individual. Uranium One predicts that the highest exposed individual would be operators staying in the man camps off shift. Operators working at Uranium One typically work four shifts of 12 hours and on four shifts off. This equates to a conservative three nights per week spent in workforce housing. For the year this equates to a total of 1872 hours spent in workforce housing.

Dose to individuals at the workforce housing are monitored through the use of Radtrak track etch detectors, OSL environmental dosimeters, and airborne particulate sampling. The concentration is equated to dose using the following equation.

$$D = DCF \sum_i C_i F_i T_i$$

Where

D = annual dose (mrem/yr);
DCF =dose conversion factor
C_i = annual average concentration at the receptor location i;
F_i = equilibrium factors for receptor location I used for radon; and
Ti = occupancy time factor (fraction of year) for receptor location i

Dose conversion factors are established by taking effluent concentration limits in 10 CFR 20 Appendix B, Table 2, and using the annual dose limit of 100mrem/yr. Taking the annual dose limit and dividing by the effluent concentration limit will provide the dose conversion factor. Dose conversion factors for radon will be calculated using the daughters present with the 100 % equilibrium.

External gamma radiation will be determined through the use of Landauer environmental dosimeters. A dosimeter will be placed at each maximally exposed individual location. Dose will be assigned to each receptor.

Dose for the workforce housing at Irigaray is summarized in Table 1 shown below.

Table 1 Public Dose

	2015 Workforce Housing Irigaray				
	Annual Average Concentration	Annual Average Background Location	Annual Average Concentration with Background Subtracted	Dose Conversion Factor	Dose Assessment
Uranium	8E-15 µCi /ml	5.6E-14 µCi /ml	-4.8E-14 µCi /ml	5.1E13 µCi mrem / ml year	0
Th-230	N/D	5.6E-14 µCi /ml	NA	3.3E15 µCi mrem /ml year	0
Ra-226	3.5E-16 µCi /ml	5.6E-14 µCi /ml	-5.565E-14 µCi /ml	1E14 µCi mrem / ml year	0
Lead 2-10	1.5E-14 µCi /ml	5.6E-14 µCi /ml	-4.1E-14 µCi /ml	2E14 µCi mrem / ml year	0
Radon	6.25E-10 µCi /ml	5.25E-10 µCi /ml	1E-10 µCi /ml	5E11 µCi mrem /ml year	5
Accumulated External Dose	23.5 mrem	19.3 mrem	4.2 mrem		4.2
Total					9.2 mrem

Additionally doses are shown for individuals at the workforce housing at Christensen. The air particulate data was applied to these individuals as a worst case scenario since the Irigaray facility has the potential particulate emission source. The particulates generated at Christensen would be considerable less than what Irigaray would experience. The dose for Christensen is shown in Table 2.

Table 2 Public Dose	2015 Workforce Housing Christensen				
	Annual Average Concentration	Annual Average Background Location	Annual Average Concentration with Background Subtracted	Dose Conversion Factor	Dose Assessment
Uranium	8E-15 µCi /ml	5.6E-14 µCi /ml	-4.8E-14 µCi /ml	5E13 µCi mrem / ml year	0
Th-230	N/D	5.6E-14 µCi /ml	NA	3E15 µCi mrem /ml year	0
Ra-226	3.5E-16 µCi /ml	5.6E-14 µCi /ml	-5.565E-14 µCi /ml	1E14 µCi mrem / ml year	0
Lead 2-10	1.5E-14 µCi /ml	5.6E-14 µCi /ml	-4.1E-14 µCi /ml	2E14 µCi mrem / ml year	0
Radon	1.5E-10 µCi /ml	5.E-10 µCi /ml	1E-10 µCi /ml	5E11 µCi mrem /ml year	0
Accumulated External Dose	8 mrem	8.7 mrem	0		0
Total					0

7.0 SAFETY AND ENVIRONMENTAL EVAULATIONS

Per License Condition 9.4E Uranium One shall furnish, in an annual report to the NRC, a description of such changes, tests, or experiments, including a summary of the evaluations made by the safety and environmental evaluation panel (SERP). Uranium One completed a total of five SERPs during the reporting period. A summary of the SERPs findings for each evaluation can be found in Table 10 of Appendix A.

8.0 Other

8.1 ALARA REVIEW

As required by License condition 12.3 the licensee shall submit the results of the annual review of the radiation protection program content and implementation performed in accordance with 10CFR20.1101(c). ALARA audit will be submitted with the January to December semi-annual effluent.

8.2 Land Use Survey

The primary use of surrounding lands at both IR and CR project continues to be rural sheep and cattle ranching. Livestock actively graze these lands, but fencing prevents access to the evaporation ponds, plant sites, and wellfields.

The secondary use of surrounding lands continues to be petroleum production from wells dispersed throughout the region. The closest oil well at the CR project is located

approximately one third of a mile west of the CR plant. The closest oil wells at the IR site are located approximately one half mile east of proposed MU 9 wellfield.

Over the past several years (2001-2014) some additional interest has developed in the immediate areas of the IR and CR projects in the development of coal bed methane (CBM) gas. Several CBM wells are located within a half mile of Uranium facilities.

The nearest residence to the IR site is 4 miles to the north (the Brubaker Ranch) and the nearest residence to CR is the John Christensen Ranch located 3 miles southeast of the CR plant site. Both are ranch housing with a population of six or less.

Land use surveys are conducted on an annual basis to verify the use of surrounding lands is consistent with previous assessments. These assessments are used in determining survey locations and which individuals may be potentially affected by Uranium One's activities.

There were 6 CBM well installed during 2014. 1 was located in T 44N R77W Section One and the other five were located in T 45 R 77 W Section 14. A copy of the land use survey is included in Appendix B Land Use survey. Additionally a map is provided that is updated annually that shows the oil and gas activities around the site.

APPENDIX A

Tables 1-10

Table 1
Page 1 of 2
Uranium One USA, Inc. - Willow Creek Project
2014 Semi-Annual Effluent and Monitoring Report
Groundwater Volumes Injected and Recovered

Date	MU 5-2 Monthly Totals			
	Production (gallons)	Injection (gallons)	Bleed (gallons)	% Bleed
July 2014	10,035,360	9,692,208	343,152	3.4 %
August 2014	9,037,472	8,934,969	102,503	1.1 %
September 2014	6,522,373	6,417,204	105,169	1.6 %
October 2014	5,744,304	5,655,600	88,704	1.5 %
November 2014	5,585,556	5,527,068	58,488	1.0 %
December 2014	4,988,592	4,744,944	243,648	4.9 %
Totals	**41,913,657**	**40,971,993**	**941,664**	**2.2 %**

Date	MU 7 Monthly Totals			
	Production (gallons)	Injection (gallons)	Bleed (gallons)	% Bleed
July 2014	61,329,784	60,741,412	588,372	1.0 %
August 2014	73,177,759	72,259,681	918,078	1.3 %
September 2014	55,854,625	55,407,106	447,519	0.8 %
October 2014	50,357,664	49,806,288	551,376	1.1 %
November 2014	59,780,301	59,349,637	430,664	0.7 %
December 2014	45,945,072	44,891,568	1,053,504	2.3 %
Totals	**346,445,205**	**342,455,692**	**3,989,513**	**1.2 %**

Date	MU 8 Monthly Totals			
	Production (gallons)	Injection (gallons)	Bleed (gallons)	% Bleed
July 2014	93,404,600	92,373,044	1,031,556	1.1 %
August 2014	90,393,841	90,020,467	373,374	0.4 %
September 2014	76,052,998	75,452,257	600,741	0.8 %
October 2014	73,338,048	72,619,344	718,704	1.0 %
November 2014	84,894,550	84,198,954	695,596	0.8 %
December 2014	68,410,656	68,360,544	50,112	0.1 %
Totals	**486,494,693**	**483,024,610**	**3,470,083**	**0.7 %**

Table 1
Page 2 of 2
Uranium One USA, Inc. - Willow Creek Project
2014 Semi-Annual Effluent and Monitoring Report
Groundwater Volumes Injected and Recovered

Date	MU 10A Monthly Totals			
	Production (gallons)	Injection (gallons)	Bleed (gallons)	% Bleed
July 2014	42,360,767	41,884,416	476,351	1.1 %
August 2014	42,736,536	42,357,447	379,089	0.9 %
September 2014	34,354,224	33,858,576	495,648	1.4 %
October 2014	34,567,056	34,202,304	364,752	1.1 %
November 2014	41,295,576	40,742,123	553,453	1.3 %
December 2014	33,184,368	32,760,000	424,368	1.3 %
Totals	**228,498,527**	**225,804,866**	**2693661.0**	**1.2 %**

Date	MU 10B Monthly Totals			
	Production (gallons)	Injection (gallons)	Bleed (gallons)	% Bleed
July 2014	76,377,048	75,180,096	1,196,952	1.6 %
August 2014	73,676,493	72,639,252	1,037,241	1.4 %
September 2014	61,293,312	60,663,600	629,712	1.0 %
October 2014	62,687,520	62,109,936	577,584	0.9 %
November 2014	72,837,234	71,912,104	925,130	1.3 %
December 2014	55,724,400	55,365,696	358,704	0.6 %
Totals	**402,596,007**	**397,870,684**	**4,725,323**	**1.2 %**

Overall	**1,505,948,089**	**1,490,127,845**	**15,820,244**	**1.1 %**

Table 2 - Christensen Ranch Weekly Maximum Injection Pressures per Module Building

Mine Unit 7

	Weekly Maximum injection Pressure (Maximum Permissible 140 psi)					
Week Ending	Module 7-1	Module 7-2	Module 7-3	Module 7-4	Module 7-5	Module 7-6
7/6/2014	126	134	48	103	125	105
7/13/2014	126	134	60	114	0	105
7/20/2014	133	133	90	115	0	105
7/27/2014	134	132	75	122	0	120
8/3/2014	124	135	76	119	29	118
8/10/2014	115	131	90	119	87	109
8/17/2014	120	125	109	121	96	115
8/24/2014	120	120	124	118	100	105
8/31/2014	139	134	84	119	101	106
9/7/2014	120	126	94	123	105	101
9/14/2014	110	134	81	106	94	109
9/21/2014	108	125	82	118	107	115
9/28/2014	120	0	86	82	111	108
10/5/2014	127	0	90	97	106	107
10/12/2014	117	0	90	101	114	119
10/19/2014	108	0	124	119	112	130
10/26/2014	115	0	102	120	106	115
11/2/2014	94	0	104	132	107	115
11/9/2014	115	0	90	123	110	124
11/16/2014	**200**	0	92	**200**	**200**	112
11/23/2014	139	0	102	126	120	124
11/30/2014	**156**	0	111	131	114	112
12/7/2014	**159**	0	109	**145**	115	110
12/14/2024	115	0	117	107	114	102
12/21/2014	123	0	122	104	135	122
12/28/2014	111	0	131	110	126	115

Table 2 - Christensen Ranch Weekly Maximum Injection Pressures per Module Building

Mine Unit 8

	Weekly Maximum injection Pressure (Maximum Permissible 140 psi)					
Week Ending	Module 8-1	Module 8-2	Module 8-3	Module 8-4/5	Module 8-6	Module 8-7
7/6/2014	75	97	126	84	69	105
7/13/2014	90	91	85	95	71	107
7/20/2014	80	95	81	79	80	104
7/27/2014	80	99	74	84	64	105
8/3/2014	85	101	79	85	66	110
8/10/2014	81	86	70	76	65	115
8/17/2014	80	95	80	80	81	114
8/24/2014	94	94	84	79	91	104
8/31/2014	83	90	77	94	95	106
9/7/2014	89	95	75	100	99	112
9/14/2014	83	95	71	76	69	115
9/21/2014	81	90	80	85	61	114
9/28/2014	90	80	71	76	61	111
10/5/2014	90	90	83	76	68	115
10/12/2014	85	90	80	75	80	117
10/19/2014	84	90	77	74	81	115
10/26/2014	90	97	88	78	81	119
11/2/2014	91	84	82	78	85	124
11/9/2014	90	86	60	82	66	120
11/16/2014	**191**	84	67	96	73	125
11/23/2014	97	96	90	87	81	135
11/30/2014	94	94	81	81	78	132
12/7/2014	101	95	75	87	66	121
12/14/2024	90	96	82	85	66	125
12/21/2014	134	94	81	86	62	126
12/28/2014	93	96	83	83	60	121

Table 2 - Christensen Ranch Weekly Maximum Injection Pressures per Module Building

Mine Unit 8 (Cont.) and Mine Unit 5-2

	Weekly Maximum injection Pressure (Maximum Permissible 140 psi)					
Week Ending	Module 8-8	Module 8-9		Module 5-2		
7/6/2014	100	102		130		
7/13/2014	106	96		130		
7/20/2014	103	102		134		
7/27/2014	104	104		133		
8/3/2014	108	108		131		
8/10/2014	99	102		139		
8/17/2014	110	109		130		
8/24/2014	107	104		135		
8/31/2014	104	76		131		
9/7/2014	106	98		126		
9/14/2014	100	95		127		
9/21/2014	111	100		125		
9/28/2014	118	95		100		
10/5/2014	124	91		115		
10/12/2014	120	105		107		
10/19/2014	103	96		129		
10/26/2014	115	107		124		
11/2/2014	107	88		133		
11/9/2014	112	94		131		
11/16/2014	116	85		**191**		
11/23/2014	118	109		124		
11/30/2014	110	94		130		
12/7/2014	100	93		119		
12/14/2024	115	91		125		
12/21/2014	117	108		133		
12/28/2014	100	101		132		

Table 2 - Christensen Ranch Weekly Maximum Injection Pressures per Module Building

Mine Unit 10

	Weekly Maximum injection Pressure (Maximum Permissible 140 psi)					
Week Ending	Module 10-1	Module 10-2	Module 10-3	Module 10-4	Module 10-5	Module 10-6
7/6/2014	110	125	133	135	130	125
7/13/2014	123	135	132	139	134	124
7/20/2014	124	129	133	134	130	125
7/27/2014	115	130	134	135	128	125
8/3/2014	115	131	134	136	130	126
8/10/2014	109	126	132	132	134	125
8/17/2014	110	130	135	133	136	125
8/24/2014	99	130	125	135	135	125
8/31/2014	105	125	126	133	124	125
9/7/2014	101	125	130	134	126	131
9/14/2014	109	117	129	132	128	125
9/21/2014	114	125	130	130	127	125
9/28/2014	114	119	127	135	129	124
10/5/2014	121	123	132	133	132	124
10/12/2014	117	128	131	131	135	134
10/19/2014	114	126	133	128	133	127
10/26/2014	125	130	134	135	127	125
11/2/2014	114	130	138	131	139	126
11/9/2014	117	129	130	132	130	125
11/16/2014	94	125	135	127	120	140
11/23/2014	90	125	135	118	124	125
11/30/2014	71	130	131	129	124	126
12/7/2014	70	125	140	131	125	129
12/14/2024	71	130	127	126	130	125
12/21/2014	82	126	126	129	129	125
12/28/2014	85	126	125	135	127	125

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Sample Location	Christensen Ranch House #3					
Radionuclide	3rd quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*	4th quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*
Uranium (Dissolved)	DOWN	NA	NA	DOWN	NA	NA
Uranium (Suspended)	DOWN	NA	NA	DOWN	NA	NA
Thorium-230 (Dissolved)	DOWN	NA	NA	DOWN	NA	NA
Thorium-230 (Suspended)	DOWN	NA	NA	DOWN	NA	NA
Radium-226 (Dissolved)	DOWN	NA	NA	DOWN	NA	NA
Radium-226 (Suspended)	DOWN	NA	NA	DOWN	NA	NA
Lead-210 (Dissolved)	DOWN	NA	NA	DOWN	NA	NA
Lead-210 (Suspended)	DOWN	NA	NA	DOWN	NA	NA
Polonium-210 (Dissolved)	DOWN	NA	NA	DOWN	NA	NA
Polonium-210 (Suspended)	DOWN	NA	NA	DOWN	NA	NA

Sample Location	Christensen Ranch First Artesian #1					
Radionuclide	3rd quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*	4th quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*
Uranium (Dissolved)	ND	NA	NA	ND	NA	NA
Uranium (Suspended)	ND	NA	NA	1.4E-09	NA	0.5
Thorium-230 (Dissolved)	ND	NA	NA	ND	NA	NA
Thorium-230 (Suspended)	ND	NA	NA	ND	NA	NA
Radium-226 (Dissolved)	4.0E-10	1.0E-10	0.4	3.0E-10	1.0E-10	0.3
Radium-226 (Suspended)	ND	NA	NA	2.0E-10	1.0E-10	0.2
Lead-210 (Dissolved)	ND	NA	NA	1.6E-09	8.0E-10	16.0
Lead-210 (Suspended)	ND	NA	NA	5.7E-09	1.2E-10	57.0
Polonium-210 (Dissolved)	ND	NA	NA	ND	NA	NA
Polonium-210 (Suspended)	ND	NA	NA	ND	NA	NA

Sample Location	Christensen Ranch Ellendale #4					
Radionuclide	3rd quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*	4th quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*
Uranium (Dissolved)	1.1E-08	NA	3.7	7.0E-10	NA	0.2
Uranium (Suspended)	3.0E-10	NA	0.1	ND	NA	NA
Thorium-230 (Dissolved)	ND	NA	NA	ND	NA	NA
Thorium-230 (Suspended)	ND	NA	NA	ND	NA	NA
Radium-226 (Dissolved)	4.0E-10	1.0E-10	0.4	ND	NA	NA
Radium-226 (Suspended)	ND	NA	NA	ND	NA	NA
Lead-210 (Dissolved)	ND	NA	NA	ND	NA	NA
Lead-210 (Suspended)	3.3E-09	6.0E-10	33.0	ND	NA	NA
Polonium-210 (Dissolved)	ND	NA	NA	ND	NA	NA
Polonium-210 (Suspended)	ND	NA	NA	ND	NA	NA

Sample Location	Christensen Ranch Corral #32					
Radionuclide	3rd quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*	4th quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*
Uranium (Dissolved)	3.0E-10	NA	0.1	3.0E-10	NA	0.1
Uranium (Suspended)	ND	NA	NA	ND	NA	NA
Thorium-230 (Dissolved)	ND	NA	NA	ND	NA	NA
Thorium-230 (Suspended)	ND	NA	NA	ND	NA	NA
Radium-226 (Dissolved)	3.0E-10	1.0E-10	0.3	3.0E-10	1.0E-10	0.3
Radium-226 (Suspended)	ND	NA	NA	ND	NA	NA
Lead-210 (Dissolved)	ND	NA	NA	ND	NA	NA
Lead-210 (Suspended)	ND	NA	NA	2.1E-09	8.0E-10	21.0
Polonium-210 (Dissolved)	ND	NA	NA	ND	NA	NA
Polonium-210 (Suspended)	ND	NA	NA	ND	NA	NA

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Sample Location	Christensen Ranch Middle Artesian					
Radionuclide	3rd quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*	4th quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*
Uranium (Dissolved)	ND	NA	NA	1.3E-08	NA	4.4
Uranium (Suspended)	ND	NA	NA	ND	NA	NA
Thorium-230 (Dissolved)	ND	NA	NA	1.1E-09	5.0E-10	18.3
Thorium-230 (Suspended)	ND	NA	NA	ND	NA	NA
Radium-226 (Dissolved)	ND	1.0E-10	NA	3.0E-10	1.0E-10	0.3
Radium-226 (Suspended)	ND	NA	NA	ND	NA	NA
Lead-210 (Dissolved)	ND	4.0E-10	NA	1.1E-09	5.0E-10	11.0
Lead-210 (Suspended)	ND	4.0E-10	NA	1.2E-09	7.0E-10	12.0
Polonium-210 (Dissolved)	ND	NA	NA	ND	NA	NA
Polonium-210 (Suspended)	ND	NA	NA	ND	NA	NA

Sample Location	Christensen Ranch Dell Gulch # 13					
Radionuclide	3rd quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*	4th quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*
Uranium (Dissolved)	2.0E-10	NA	0.1	ND	NA	NA
Uranium (Suspended)	ND	NA	NA	ND	NA	NA
Thorium-230 (Dissolved)	ND	NA	NA	ND	NA	NA
Thorium-230 (Suspended)	ND	NA	NA	ND	NA	NA
Radium-226 (Dissolved)	3.0E-10	1.0E-10	0.3	1.5E-09	1.0E-10	1.5
Radium-226 (Suspended)	2.0E-10	1.0E-10	0.2	ND	NA	NA
Lead-210 (Dissolved)	1.0E-09	5.0E-10	10.0	ND	NA	NA
Lead-210 (Suspended)	ND	NA	NA	1.3E-09	6.0E-10	13.0
Polonium-210 (Dissolved)	ND	NA	NA	ND	NA	NA
Polonium-210 (Suspended)	ND	NA	NA	ND	NA	NA

Sample Location	Irigaray Willow #2					
Radionuclide	3rd quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*	4th quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*
Uranium (Dissolved)	ND	NA	NA	ND	NA	NA
Uranium (Suspended)	ND	NA	NA	ND	NA	NA
Thorium-230 (Dissolved)	ND	NA	NA	ND	NA	NA
Thorium-230 (Suspended)	ND	NA	NA	ND	NA	NA
Radium-226 (Dissolved)	ND	NA	NA	ND	NA	NA
Radium-226 (Suspended)	ND	NA	NA	ND	NA	NA
Lead-210 (Dissolved)	ND	NA	NA	ND	NA	NA
Lead-210 (Suspended)	ND	NA	NA	1.1E-09	5.0E-10	11.0
Polonium-210 (Dissolved)	ND	NA	NA	ND	NA	NA
Polonium-210 (Suspended)	ND	NA	NA	ND	NA	NA

LLD's

Uranium 2.0E-10 µCi/ml
Thorium-2 2.0E-10 µCi/ml
Radium-2 2.0E-10 µCi/ml
Lead-210 1.0E-9 µCi/ml
Polonium 1.0E-9 µCi/ml

ND = NON DETECTABLE
NA= NOT APPLICABLE

***10 CFR 20 Appendix B Table 2 values**

Uranium 3.0E-7 µCi/ml
Thorium-230 6.0E-8 µCi/ml
Radium-226 1.0E-7 µCi/ml
Lead-210 1.0E-8 µCi/ml
Polonium-210 4.0E-8 µCi/ml

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Uranium One USA, Inc. - Willow Creek Project
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Surface Water

Sample Location	Irigaray-9					
Radionuclide	3rd quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*	4th quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*
Uranium (Dissolved)	2.0E-09	NA	0.7	4.0E-08	NA	13.3
Uranium (Suspended)	2.0E-10	NA	0.1	ND	NA	NA
Thorium-230 (Dissolved)	ND	NA	NA	ND	NA	NA
Thorium-230 (Suspended)	ND	NA	NA	ND	NA	NA
Radium-226 (Dissolved)	ND	NA	NA	3.0E-10	1.0E-10	5.0
Radium-226 (Suspended)	2.0E-10	1.0E-10	0.2	ND	NA	NA
Lead-210 (Dissolved)	1.1E-09	4.0E-10	11.0	1.3E-09	5.0E-10	13.0
Lead-210 (Suspended)	ND	NA	NA	1.2E-09	5.0E-10	12.0
Polonium-210 (Dissolved)	ND	NA	NA	ND	NA	NA
Polonium-210 (Suspended)	ND	NA	NA	ND	ND	NA

Sample Location	Irigaray-14					
Radionuclide	3rd quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*	4th quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*
Uranium (Dissolved)	2.4E-09	NA	0.8	9.0E-10	NA	0.3
Uranium (Suspended)	2.0E-10	NA	0.1	ND	NA	NA
Thorium-230 (Dissolved)	ND	NA	NA	ND	NA	NA
Thorium-230 (Suspended)	ND	NA	NA	ND	NA	NA
Radium-226 (Dissolved)	ND	NA	NA	2.6E-09	2.0E-10	2.6
Radium-226 (Suspended)	ND	NA	NA	2.0E-10	1.0E-10	0.2
Lead-210 (Dissolved)	ND	NA	NA	ND	NA	NA
Lead-210 (Suspended)	1.7E-09	4.0E-10	17.0	1.1E-09	8.0E-10	11.0
Polonium-210 (Dissolved)	ND	NA	NA	ND	NA	NA
Polonium-210 (Suspended)	ND	NA	NA	ND	NA	NA

Sample Location	Irigaray-17					
Radionuclide	3rd quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*	4th quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*
Uranium (Dissolved)	4.3E-09	NA	1.4	2.4E-08	NA	8.0
Uranium (Suspended)	ND	NA	NA	ND	NA	NA
Thorium-230 (Dissolved)	ND	NA	NA	ND	NA	NA
Thorium-230 (Suspended)	ND	NA	NA	ND	NA	NA
Radium-226 (Dissolved)	ND	NA	NA	1.2E-09	1.0E-10	1.2
Radium-226 (Suspended)	ND	NA	NA	ND	1.0E-10	NA
Lead-210 (Dissolved)	ND	NA	NA	ND	NA	NA
Lead-210 (Suspended)	ND	NA	NA	1.3E-09	6.0E-10	13.0
Polonium-210 (Dissolved)	ND	NA	NA	ND	NA	NA
Polonium-210 (Suspended)	ND	NA	NA	ND	NA	NA

Sample Location	Christensen Ranch GS-01					
Radionuclide	3rd quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*	4th quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*
Uranium (Dissolved)	DRY	NA	NA	DRY	NA	NA
Uranium (Suspended)	DRY	NA	NA	DRY	NA	NA
Thorium-230 (Dissolved)	DRY	NA	NA	DRY	NA	NA
Thorium-230 (Suspended)	DRY	NA	NA	DRY	NA	NA
Radium-226 (Dissolved)	DRY	NA	NA	DRY	NA	NA
Radium-226 (Suspended)	DRY	NA	NA	DRY	NA	NA
Lead-210 (Dissolved)	DRY	NA	NA	DRY	NA	NA
Lead-210 (Suspended)	DRY	NA	NA	DRY	NA	NA
Polonium-210 (Dissolved)	DRY	NA	NA	DRY	NA	NA
Polonium-210 (Suspended)	DRY	NA	NA	DRY	NA	NA

Sample Location	Christensen Ranch GS-03					
Radionuclide	3rd quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*	4th quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*
Uranium (Dissolved)	5.5E-09	NA	1.8	DRY	NA	NA
Uranium (Suspended)	ND	NA	NA	DRY	NA	NA
Thorium-230 (Dissolved)	ND	NA	NA	DRY	NA	NA
Thorium-230 (Suspended)	ND	NA	NA	DRY	NA	NA
Radium-226 (Dissolved)	ND	NA	NA	DRY	NA	NA
Radium-226 (Suspended)	ND	NA	NA	DRY	NA	NA
Lead-210 (Dissolved)	ND	NA	NA	DRY	NA	NA
Lead-210 (Suspended)	ND	NA	NA	DRY	NA	NA
Polonium-210 (Dissolved)	ND	NA	NA	DRY	NA	NA
Polonium-210 (Suspended)	ND	NA	NA	DRY	NA	NA

Sample Location	Christensen Ranch CG-05					
Radionuclide	3rd quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*	4th quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*
Uranium (Dissolved)	3.7E-09	NA	1.2	1.8E-08	NA	6.0
Uranium (Suspended)	ND	NA	NA	ND	NA	NA
Thorium-230 (Dissolved)	ND	NA	NA	ND	NA	NA
Thorium-230 (Suspended)	ND	NA	NA	ND	NA	NA
Radium-226 (Dissolved)	2.0E-10	1.0E-10	0.1	7.0E-10	1.0E-10	NA
Radium-226 (Suspended)	ND	NA	NA	ND	1.0E-10	NA
Lead-210 (Dissolved)	ND	NA	NA	1.6E-09	5.0E-10	16.0
Lead-210 (Suspended)	ND	NA	NA	1.4E-09	6.0E-10	14.0
Polonium-210 (Dissolved)	ND	NA	NA	ND	NA	NA
Polonium-210 (Suspended)	ND	NA	NA	ND	NA	NA

Sample Location	Powder River		
Radionuclide	3rd quarter (µCi/ml)	Uncertainty (±µCi/ml)	% of EFF Conc*
Uranium (Dissolved)	3.7E-09	NA	1.2
Uranium (Suspended)	1.7E-08	NA	5.7
Thorium-230 (Dissolved)	ND	NA	NA
Thorium-230 (Suspended)	5.0E-08	1.1E-08	840.0
Radium-226 (Dissolved)	ND	NA	NA
Radium-226 (Suspended)	3.3E-08	7.0E-10	32.6
Lead-210 (Dissolved)	ND	NA	NA
Lead-210 (Suspended)	7.7E-08	6.5E-09	770.0
Polonium-210 (Dissolved)	ND	NA	NA
Polonium-210 (Suspended)	ND	NA	NA

***10 CFR 20 Appendix B Table 2 values**

Uranium	3.0E-7 µCi/ml	Lead-210	1.0E-8 µCi/ml	ND = NON DETECTABLE
Thorium-230	6.0E-8 µCi/ml	Polonium-210	4.0E-8 µCi/ml	NA= NOT APPLICABLE
Radium-226	1.0E-7 µCi/ml			

LLD's

Uranium	2.0E-10 µCi/ml	Lead-21(	1.0E-9 µCi/ml
Thorium-230	2.0E-10 µCi/ml	Poloniun	1.0E-9 µCi/ml
Radium-226	2.0E-10 µCi/ml		

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Uranium One USA, Inc. - Willow Creek Project
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Vegetation Sampling

Location	Uranium * µCi / kg	Th-230 µCi / kg	Uncertainty ± µCi / kg	Ra-226 µCi / kg	Uncertainty ± µCi / kg	Pb-210 µCi / kg	Uncertainty ± µCi / kg
IRIGARAY PROJECT							
IR-1 (Downwind of Restricted Area)	2.0E-04	1.8E-05	1.4E-05	3.9E-05	8.9E-06	1.4E-04	5.5E-05
IR-3 (Upwind of Restricted Area)	8.6E-04	2.0E-05	1.3E-05	4.2E-05	1.1E-05	2.4E-04	6.4E-05
IR-4 (North Road - Background)	8.7E-05	1.7E-05	1.5E-05	8.7E-06	4.6E-06	8.7E-05	4.6E-05
IR-5 (Irigaray Ranch - nearest resident)	9.4E-06	7.2E-06	8.2E-06	7.7E-06	5.5E-06	1.1E-04	6.1E-05
IR-6 (Ridge Road S.E.)	1.2E-05	1.4E-05	1.0E-05	9.1E-06	5.1E-06	1.4E-04	4.8E-05
CHRISTENSEN PROJECT							
AS-1 (Table Mountain - Background))	8.6E-05	1.7E-06	3.3E-06	7.6E-06	4.7E-06	2.2E-04	6.1E-05
AS-5A (CR Plant Upwind S.E.)	5.7E-06	5.2E-06	6.0E-06	1.2E-05	5.1E-06	8.3E-05	4.0E-05
AS-5B (CR Plant Downwind N.W.)	3.4E-06	3.3E-06	6.5E-06	8.9E-06	4.3E-06	9.0E-05	4.0E-05
AS-6 (Christensen Ranch-Nearest Resident)	1.1E-05	1.9E-05	1.2E-05	1.8E-05	7.1E-06	2.2E-04	6.6E-05

Analyses performed by Inter-Mountian Labs (IML), Sheridan, Wyoming
* The activity for uranium is a mathematical calculation based on a chemical analysis, therefore, no precision estimate (error) is given.
The Inter-Mountain Lab LLD's are listed below and are based on the weight of the samples.

LLD's
Uranium = 2.0E-07
Th-230 = 2.0E-07
Ra-226 = 5.0E-08
Pb-210 = 1.0E-06

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Uranium One USA, Inc. - Willow Creek Project
2014 Semi-Annual Effluent and Monitoring Report
Environmental Radon Monitoring

Location	1st Quarter µCi/ml (2014)	Uncertainty ± µCi/ml	2nd Quarter µCi/ml 2014	Uncertainty ± µCi/ml	3rd Quarter µCi/ml (2014)	Uncertainty ± µCi/ml	4th Quarter µCi/ml ** 2014	Uncertainty ± µCi/ml	Location Average 2014	10CFR APP B Table 2
IRIGARAY PROJECT										
IR-1 (Downwind of Restricted Area)	6.00E-10	4.00E-11	5.00E-10	3.00E-11	7.00E-10	5.00E-11	1.00E-09	6.00E-11	7.00E-10	1.00E-10
IR-3 (Upwind of Restricted Area)	5.00E-10	4.00E-11	3.00E-10	3.00E-11	8.00E-10	6.00E-11	1.00E-09	6.00E-11	6.50E-10	1.00E-10
IR-4 (North Road)	6.00E-10	5.00E-11	3.00E-10	2.00E-11	6.00E-10	5.00E-11	1.00E-09	6.00E-11	6.25E-10	1.00E-10
IR-5 (Irigaray Ranch)	8.00E-11	1.00E-11	7.00E-11	1.00E-11	4.00E-10	3.00E-11	1.00E-09	6.00E-11	3.88E-10	1.00E-10
IR-6 (Rigdge Road - S.E. - Background)	5.00E-10	4.00E-11	4.00E-10	3.00E-11	7.00E-10	5.00E-11	5.00E-10	4.00E-11	5.25E-10	1.00E-10
IR-13 (IR Employee House Trailer)	5.00E-10	4.00E-11	2.00E-10	2.00E-11	8.00E-10	6.00E-11	1.00E-09	6.00E-11	6.25E-10	1.00E-10
(IR-13 / nearest residence)										
CHRISTENSEN PROJECT										
AS-1 (Table Mountain - Background)	3.00E-10	2.00E-11	4.00E-10	3.00E-11	8.00E-10	6.00E-11	5.00E-10	4.00E-11	5.00E-10	1.00E-10
AS-5A (CR Plant Upwind S.E.)	4.00E-10	3.00E-11	2.00E-10	2.00E-11	6.00E-10	4.00E-11	1.00E-09	6.00E-11	3.00E-10	1.00E-10
AS-5B (CR Plant Downwind N.W)	2.00E-10	2.00E-11	5.00E-10	4.00E-11	4.00E-10	3.00E-11	1.00E-09	6.00E-11	3.50E-10	1.00E-10
AS-6 (Christensen Ranch)	3.00E-10	3.00E-11	*	*	8.00E-10	5.00E-11	1.00E-09	6.00E-11	3.00E-10	1.00E-10
AS-7 (CR Employee House Trailer)	2.00E-10	1.00E-11	1.00E-10	1.00E-11	6.00E-10	5.00E-11	1.00E-09	6.00E-11	1.50E-10	1.00E-10
(AS-7 / nearest residence)										

LLD = 0.06 pCi/l

* Radon cup was found on the ground, value was not reported**Technican mixed up radon detectors such that it was unclear which belonged to which. The highest recorded radon was applied to all locations except background. The lowest reading was

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Uranium One USA, Inc. - Willow Creek Project
2014 Semi-Annual Effluent and Monitoring Report
Dryer Stack Emissions Testing Results

SUMMARY OF STACK EMISSIONS SURVEY RESULTS
Irigaray Dryer and Packaging Circuit

Time	Total Particulates	U3O8 Emissions	Unat. Released	Unat. Uncertainty	Th-230 Released	Th-230 Uncertainty	Ra-226 Released	Ra-226 Uncertainty	Pb-210 Released	Pb-210 Uncertainty
	lbs/hour (% limit)	lbs	Ci	Ci	Ci	Ci	Ci	Ci	Ci	Ci
Jan-June, 2014	0.034 (~11%)	28	8.47E-03	NA	7.68E-06	4.28E-06	3.57E-05	3.28E-06	9.33E-04	9.28E-05
July- December 2014	0.049 (~16%)	67.8	2.04E-02	NA	1.31E-05	6.66E-06	1.07E-04	9.49E-06	1.99E-03	7.94E-05
Total		95.8	2.89E-02		2.08E-05		1.43E-04		2.92E-03	
	Permit Limit 0.30									

COMMENTS: Surveys occurred May 22, 2014 and December 09, 2014. The dryer was in operation for an approximate 3540 hours from January 01, 2014 through June 30, 2014. This is updated from the original amount estimated in the previous report. The dryer was in operation 3396 hours from July 01, 2014 through December 31, 2014. The total hours of operations were used to calulate the quantity of material released.

Table 7
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Uranium One USA, Inc. - Willow Creek Project
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Dryer Stack Emissions Testing Results

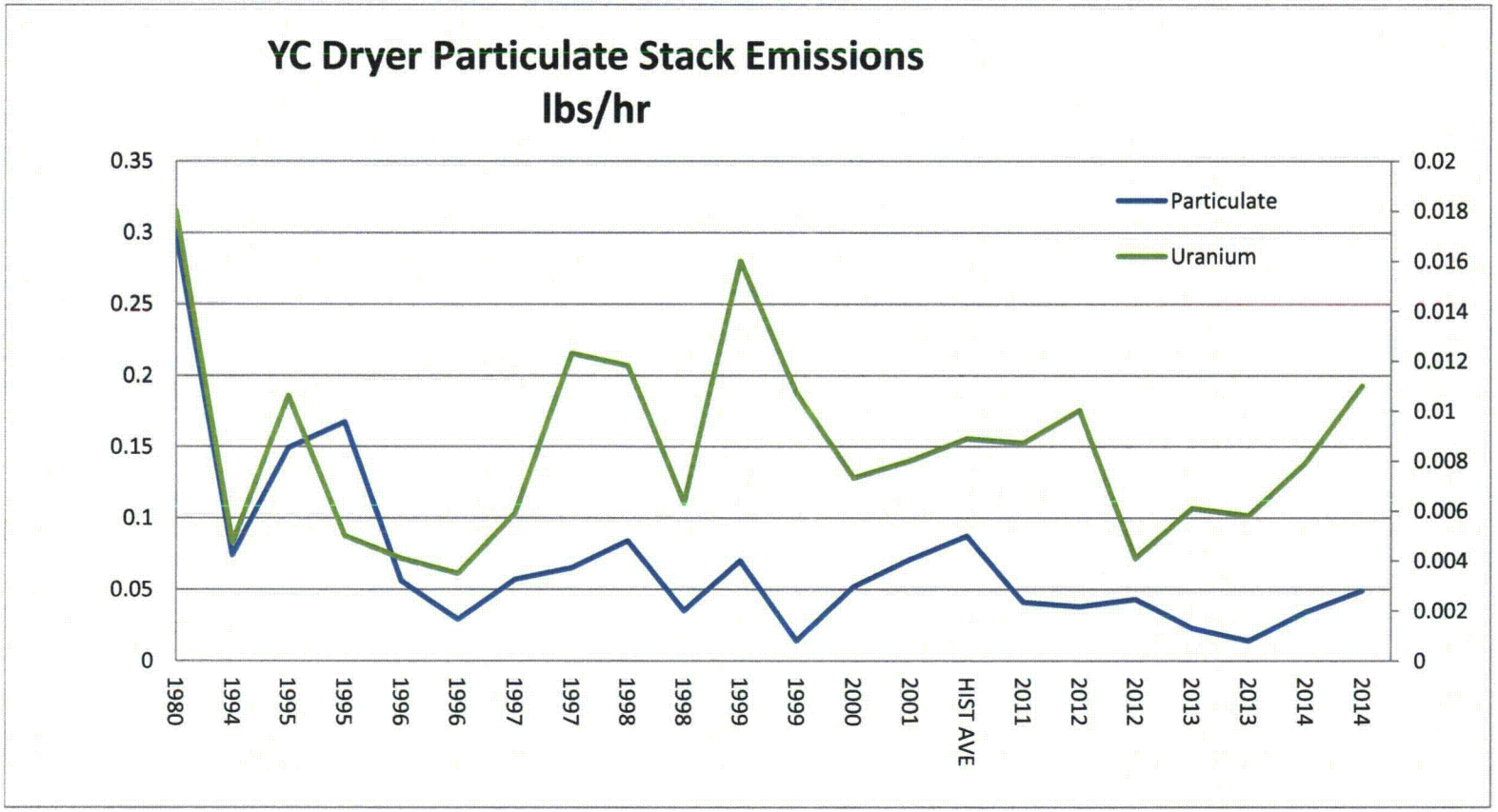

Table 7
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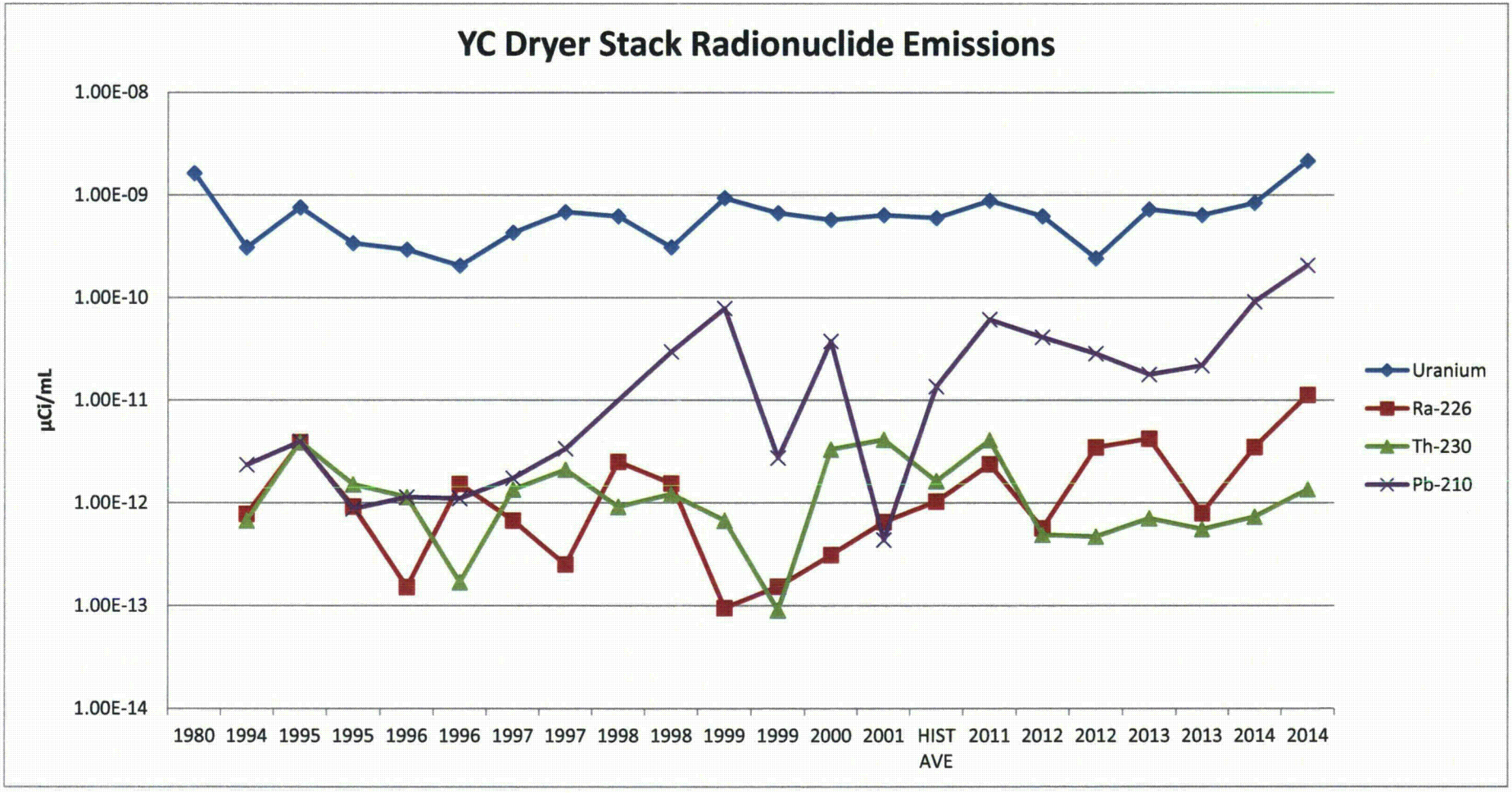
Uranium One USA, Inc. - Willow Creek Project
2014 Semi-Annual Effluent and Monitoring Report
Dryer Stack Emissions Testing Results



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Uranium One USA, Inc. - Willow Creek Project
2014 Semi-Annual Effluent and Monitoring Report
Environmental Airborne Radionuclides

1st Quarter 2014 Data	Uranium µCi/ml	Th-230 µCi/ml	Ra-226 µCi/ml	Pb-210 µCi/ml
IR-1 Downwind	2.6E-14	5.2E-17	3.5E-16	1.3E-14
Uncertainty	NA	2.6E-17	5.2E-17	1.4E-15
%of Pt, App. B Effluent Limit	1.3%	0.2%	0.0%	2.2%
IR-3 Upwind	8.5E-14	7.8E-17	2.6E-16	1.5E-14
Uncertainty	NA	2.6E-17	5.2E-17	1.5E-15
%of Pt, App. B Effluent Limit	4.4%	0.3%	0.0%	2.5%
IR-5 Brubaker Ranch	1.0E-15	2.1E-16	3.2E-16	8.9E-15
Uncertainty	NA	7.8E-17	5.2E-17	1.1E-15
%of Pt, App. B Effluent Limit	0.1%	0.7%	0.0%	1.5%
IR-6 Background	2.2E-13	2.9E-16	4.5E-16	1.3E-14
Uncertainty	NA	1.2E-16	7.8E-17	1.7E-15
%of Pt, App. B Effluent Limit	11.3%	1.0%	0.1%	2.2%
IR-13 Employee House Trailer	8.0E-15	ND	3.5E-16	1.5E-14
Uncertainty	NA	NA	5.2E-17	1.5E-15
%of Pt, App. B Effluent Limit	0.4%	NA	0.0%	2.5%

2nd Quarter 2014 Data	Uranium µCi/ml	Th-230 µCi/ml	Ra-226 µCi/ml	Pb-210 µCi/ml
IR-1 Downwind	2.4E-14	2.1E-16	2.5E-16	1.1E-14
Uncertainty	NA	7.6E-17	5.1E-17	1.1E-15
%of Pt, App. B Effluent Limit	1.2%	0.7%	0.0%	1.8%
IR-3 Upwind	8.7E-14	2.3E-16	2.2E-16	1.2E-14
Uncertainty	NA	1.0E-16	5.1E-17	1.2E-15
%of Pt, App. B Effluent Limit	4.5%	0.8%	0.0%	2.0%
IR-5 Brubaker Ranch	1.2E-15	2.6E-16	2.9E-16	1.2E-14
Uncertainty	NA	1.1E-16	5.4E-17	1.2E-15
%of Pt, App. B Effluent Limit	0.1%	0.9%	0.0%	2.0%
IR-6 Background	1.6E-16	3.2E-17	3.5E-17	6.8E-16
Uncertainty	NA	1.3E-17	6.3E-18	1.2E-16
%of Pt, App. B Effluent Limit	0.0%	0.1%	0.0%	0.1%
IR-13 Employee House Trailer	7.7E-15	2.8E-16	2.1E-16	9.9E-15
Uncertainty	NA	1.0E-16	5.1E-17	1.1E-15
%of Pt, App. B Effluent Limit	0.4%	0.9%	0.0%	1.7%

3rd Quarter 2014 Data	Uranium µCi/ml	Th-230 µCi/ml	Ra-226 µCi/ml	Pb-210 µCi/ml
IR-1 Downwind	1.3E-14	5.4E-16	2.1E-16	1.9E-14
Uncertainty	NA	5.5E-16	5.0E-17	1.4E-15
%of Pt, App. B Effluent Limit	0.7%	1.8%	0.0%	3.2%
IR-3 Upwind	4.0E-14	6.1E-16	3.2E-16	1.9E-14
Uncertainty	NA	1.5E-16	5.0E-17	1.4E-15
%of Pt, App. B Effluent Limit	2.1%	2.0%	0.0%	3.2%
IR-5 Brubaker Ranch	1.8E-15	4.7E-16	3.1E-16	2.0E-14
Uncertainty	NA	7.0E-16	5.6E-17	1.6E-15
%of Pt, App. B Effluent Limit	0.1%	1.6%	0.0%	3.3%
IR-6 Background	2.0E-16	ND	ND	ND
Uncertainty	NA	NA	NA	NA
%of Pt, App. B Effluent Limit	0.0%	NA	NA	NA
IR-13 Employee House Trailer	5.1E-15	2.0E-16	2.5E-16	2.3E-14
Uncertainty	NA	7.5E-17	5.0E-17	1.6E-15
%of Pt, App. B Effluent Limit	0.3%	0.0%	0.0%	3.8%

4th Quarter 2014 Data	Uranium µCi/ml	Th-230 µCi/ml	Ra-226 µCi/ml	Pb-210 µCi/ml
IR-1 Downwind	2.7E-14	3.0E-16	5.2E-16	1.7E-14
Uncertainty	NA	1.0E-16	7.6E-17	1.8E-15
%of Pt, App. B Effluent Limit	1.4%	1.0%	0.1%	2.8%
IR-3 Upwind	1.2E-13	2.9E-16	5.7E-16	1.9E-14
Uncertainty	NA	1.0E-16	7.6E-17	1.7E-15
%of Pt, App. B Effluent Limit	6.2%	1.0%	0.1%	3.2%
IR-5 Brubaker Ranch	3.0E-15	1.2E-15	4.3E-16	1.1E-14
Uncertainty	NA	9.7E-16	8.3E-17	1.7E-15
%of Pt, App. B Effluent Limit	0.2%	4.0%	0.0%	1.8%
IR-6 Background	5.3E-15	2.1E-16	2.3E-16	1.5E-14
Uncertainty	NA	9.2E-17	6.1E-17	1.7E-15
%of Pt, App. B Effluent Limit	0.3%	0.7%	0.0%	2.5%
IR-13 Employee House Trailer	7.0E-15	3.0E-16	2.9E-16	2.5E-14
Uncertainty	NA	1.0E-16	5.1E-17	2.5E-15
%of Pt, App. B Effluent Limit	0.4%	1.0%	0.0%	4.2%

2014 Summary (Averages)	U (µCi/ml)	Th-230 (µCi/ml)	Ra-226 (µCi/ml)	PB-210 (µCi/ml)
IR-1	2.3E-14	2.7E-16	3.3E-16	1.5E-14
IR-3	8.3E-14	3.0E-16	3.4E-16	1.6E-14
IR-5	1.8E-15	5.4E-16	3.4E-16	1.3E-14
IR-6	5.6E-14	1.8E-16	2.4E-16	9.6E-15
IR-13	7.0E-15	2.6E-16	2.8E-16	1.8E-14

10 CFR Pt. 20, App. B, Effluent Limits (uCi/ml)
Uranium = 1.95E-12 (50%D & 50%W)
Th-230 = 3.0E-14 (Y)
Ra-226 = 9.0E-13 (W)
Pb- 210 = 6.0E-13 (D)

Lab LLD's
Uranium = 1.0E-16
Th-230 = 1.0E-16
Ra-226 = 1.0E-16
Pb-210 = 2.0E-15

N/D =Non Detectable

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Uranium One USA, Inc. - Willow Creek Project
2014 Semi-Annual Effluent and Monitoring Report
Environmental Gamma Radiation Monitoring

Location	1st Quarter 2014 mrem/quarter	2nd Quarter 2014 mrem/quarter	3rd Quarter 2014 mrem/quarter	4th Quarter 2014 mrem/quarter	Location Average 2014 mrem/quarter	Year to Date Total 2014 mrem/quarter
IRIGARAY PROJECT						
Control	34	36.6	37.9	35	NA	NA
IR-1 (Downwind of Restricted Area)	3.1	20.9	9.4	7.8	10.3	24.0
IR-3 (Upwind of Restricted Area)	15.8	35.5	20.7	26.5	24.6	51.3
IR-4 (North Road)	1.0	18.9	6.3	4.1	7.6	19.9
IR-5 (Irigaray Ranch)	-1.1	13.9	1.8	0.6	3.8	12.8
IR-6 (Ridge Road S.E. - Background)	-0.4	19.7	8.5	2.0	7.5	19.3
IR-13 (I.R. Employee House Trailer) (nearest residence)	3.3	20.2	3.3	2.1	11.8	23.5
Quarterly Average	3.6	21.5	8.3	7.2	10.2	12.6
CHRISTENSEN PROJECT						
AS-1 (Table Mountain - Background)	1	16.3	3.5	-4.2	4.2	8.7
AS-5A(CR Plant Upwind S.E.)	6.5	23	8.5	6.2	11.1	14.8
AS-5B (CR Plant Downwind N.W.)	2.7	19.7	5.2	3	7.7	11.2
AS-6 (Christensen Ranch)	3.0	24.8	10.1	*	12.6	13.9
AS-7 (C.R. Employee House Trailer) (nearest residence)	-2.0	17.9	-1.9	-3.7	2.6	8.0
Quarterly Average	2.2	20.3	5.1	0.3	2.2	11.3

*Badge was not found at location. The location was knocked over by what appeared to be a cow.

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Uranium One USA, Inc-Willow Creek Project
2014 Semi-Annual Effluent and Monitoring Report
SERP Summary

SERP No.	Date	SERP Topic	Evaluation Summary
SERP 14-02	3/26/2014	Review and Approval of RST Qualifications	The purpose of the SERP evaluation is to determine if an individual meets the qualification as a Radiation Safety Technician. As specified in Regulatory Guide 8.31 Section 2.4, as incorporated in SUA-1341, License Condition 9.12. The licensee can make a determination that an individual meets the qualifications as a RST based on education, training , and work experience. The criteria used to evaluate qualifications of an individual as a RST include review of NRC regulatory Guides, the approved 2013 NRC License Renewal Application (SUA-1341) and specified license conditions as contained in SUA-1341.
SERP 14-03	4/01/14	Review and Approval of Addition of Spray Nozzle's to YC Scrubber System	The SERP action is to determine if the addition of a spray system to wet the YC scrubber screen is an action that can be conducted by the SERP committee, or would require a license amendment. The addition of the spray nozzle system was a recommendation of representative of Lyntek, as part of their evaluation of Irigaray YC dryer operational systems. In May of 2013 , Lyntek was contacted to perform an evaluation of the Irigaray multi hearth furnace system. Based on these recommendations Uranium One is proposing to add a spray system to investigate if it helps improve scrubber efficiencies and extend operational life of screens.

SERP14-04	8/04/14	Review and Approval of Brine Solution Being Recycled into the Injection Stream	The Proposal is to add an additional line from the reverse osmosis unit (RO) to the injection stream to temporarily introduce up to 90 gallons per minute (GPM) of brine solution into the injection stream. By introducing the brine solution into the recovery line. It will decrease the amount of solution sent to the storage ponds and therefore allow for maintenance activities on the deep disposal wells
SERP 14-05	9/22/14	2013 Annual Review of License Renewal Application Section 7.5 Effects of Accidents	The purpose of this evaluation by the Uranium One Safety and Environmental Review Panel (SERP) is to perform the annual review of Section 7.5 Effects of Accidents as listed in the May 2008 License Renewal Application
SERP14-06	11/04/14	Review and Implementation of Root Cause Findings Regarding Honeywell Drum Pressurization Incident	The SERP is reviewing the implementation of the September 9,2014 Drum Pressurization Incident at the Honeywell Uranium Refinery
SERP 14-07	12/10/14	Terminating the Use of Organic Filtration in the Honeymoon Reprocessing Enclosure	The proposal is to discontinue the use of organic filters while reprocessing Honeymoon Yellowcake. The proposal is based on data taken since October 24, 2014. Additionally Uranium One is reviewing the proposal to discontinue taking four-gas readings before entering the reprocessing enclosure.
SERP 15-01	1/15/15	Review and Approval of Increasing the Dryer to Above 1200 Degrees Fahrenheit	The Uranium One Safety and Environmental Review Panel (SERP) is reviewing the proposal to change the temperature of the Irigaray dryer to allow for excess moisture in the yellowcake slurry to be burned off and allow for the product to reach a temperature such that the uranium mineralogy would be closer to UO_3 or U_3O_8.

APPENDIX B

Land Use Survey

Table 1 Land Use Survey

Irigaray T 44 N R76W		Christensen T 44N R76W		Christensen T 44N R77W		Christensen T 45N R76W		Christensen T 45N R77W	
Section	Water Right	Section	Water Right	Section	Water Right	Section	Water Right	Section	Water Right
10	2007	22	2011	14	2010	31	1995	36	2012
4	2007	21	2010	13	2007	32	2007	35	2012
3	2011	20	1997	12	2011	33	2011	34	2007
33	2009	19	1973	11	2011	34	2007	33	1996
34	2008	18	2007	10	2006	27	2011	28	2010
32	2006	16	2011	9	2011	28	2011	27	2006
31	2007	15	None	4	2007	29	1978	26	2006
6	2003	14	1960	3	2010	30	2013	25	2013
5	2010	11	None	2	2010	19	2011	24	2013
7	None	10	2011	1	*2014	20	2011	23	2011
8	2009	9	2011			21	2011	22	2011
18	1964	6	2009			18	2011	13	2007
17	None	5	2009			17	2006	14	**2014
16	2013	4	2011						
19	2006	3	2011						
20	2010	2	None						
21	2007								
9	2013								

* 1 CBM well installed during 2014 in Section 1 on June 4, 2014 by Anadarko. Permit Number P202245.0W

** 5 CBM wells installed during 2014 in Section 14 on March 10, 2014 by Encore Energy Partners Operating LLC. Permit Numbers P201647.0W – P201651.0W

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Willow Creek Project
Controlled/Restricted Areas

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